AMENDMENT TO THE CLAIMS

Please amend the presently pending claims as follows:

1-19. (Cancelled)

20. (Previously Presented) An apparatus for adaptively generating an output responsive to a sensed position signal, a desired position signal and at least one of a torque and an inertia wherein the apparatus further comprises a discrete controller circuit that has a controller gain that is adapted in a fixed range as a function of adaptive parameter data and further comprises an actuator, and wherein the output comprises a controlled electric current coupled to the actuator.

21. (Previously Presented) The apparatus of Claim 20 further comprising:

an adaptive system generating the adaptive parameter data according to an update equation.

22. (Previously Presented) The apparatus of Claim 21 wherein the adaptive system generates the adaptive parameter data based on both the torque and the inertia.

23-24. (Cancelled)

25. (Currently Amended) The apparatus of Claim ~~1~~20 wherein the controlled electric current is controlled by pulse width modulation.

26. (Currently Amended) The apparatus of Claim ~~1~~20 wherein the discrete controller circuit further comprises a digital-to-analog converter providing the controlled electric current.

27. (Currently Amended) The apparatus of Claim ~~1~~20 wherein the sensed position signal is derived from a read/write head.

28. (Previously Presented) An apparatus comprising:

adaptive parameter data based on at least one of a torque and an inertia; and

a controller circuit for receiving a sensed position signal sensed by a read/write head and adapted to receive reference data indicating a desired position, for adaptively generating an output which is based on the adaptive parameter data, the controller circuit providing a controller gain that is adapted in a fixed range as a function of adaptive parameter data.

29. (Previously Presented) The apparatus of Claim 28 wherein the controller circuit comprises first and second controllers that are stable.

30. (Previously Presented) The apparatus of Claim 29 wherein the first and second controllers use an error model.

31. (Cancelled)

32. (Previously Presented) A method comprising the steps of adaptively generating a controlled electric current output responsive to a sensed position signal, a desired position signal and at least one of a torque and an inertia and providing a controller gain that is adapted in a fixed range as a function of adaptive parameter data, and coupling the controlled electric current output to an actuator.

33. (Previously Presented) The method of Claim 32 wherein the output is controlled based on adaptive parameter data.

34. (Previously Presented) The method of Claim 33 wherein the adaptive parameter data is updated based on at least one of a torque and an inertia.

35. (Previously Presented) A method comprising the step of adaptively generating an output responsive to a sensed position signal, a desired position signal and at least one of a torque and an inertia, wherein the output is controlled based on adaptive parameter data that is updated based on at least one of a torque and an inertia, and wherein adaptive parameter data is updated digitally in real time using instructions stored in a computer readable program storage device.

36. (Previously Presented) The method of Claim 35 wherein the output is coupled to a voice coil motor in a disc drive.